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ABSTRACT

This paper examines the concept of school climate as a key factor in the success of planned change in elementary schools. Beginning with a general review of the literature on organizational climate and using as its basis three major reviews that appeared in the mid-1970s, the paper defines climate, examines variables that have been used as part of climate constructs, examines distinctions between climate and other organizational variables, and discusses key measurement problems related to climate. The paper then examines research on organizational climate in schools. Discussion centers on Halpin and Croft's Organizational Climate Description Questionnaire and Likert's Profile of a School, and studies which have used these instruments to examine change in schools are summarized. The paper concludes with a discussion of the limitations of existing instruments to measure school climate and offers suggestions for future research. Three tables, five pages of references, and one page of reference notes are included. (IW)

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Working Paper No. 270

School Climate and Planned Educational Change: An Analysis of the Effectiveness of Three Approaches

by Katherine DeWalt Kasten

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Wisconsin Center for Education Research

Working Paper 279

SCHOOL CLIMATE AND PLANNED EDUCATIONAL CHANGE: A REVIEW AND CRITIQUE OF THE LITERATURE

by

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Report from the Project on
Studies of the Implementation of Individualized Schooling

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The mission of the Wisconsin Research and Development Center is to improve the quality of education by addressing the full range of issues and problems related to individualized schooling. Teaching, learning, and the problems of individualization are given concurrent attention in the Center's efforts to discover processes and develop strategies and materials for use in the schools. The Center pursues its mission by

- conducting and synthesizing research to clarify the processes of school-age children's learning and development
- conducting and synthesizing research to clarify effective approaches to teaching students basic skills and concepts
- developing and demonstrating improved instructional strategies, processes, and materials for students, teachers, and school administrators
- providing assistance to educators which helps transfer the outcomes of research and development to improved practice in local schools and teacher education institutions

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Abstract

The Wisconsin Research and Development Center for Individualized Schooling's project Studies of Implementation is a 3-year longitudinal investigation of planned change in selected elementary schools. The study seeks to identify factors or conditions that promote or retard change by tracking the adoption and implementation of Individually Guided Education in ten elementary schools in Wisconsin. This paper was written as part of that project.

The literature on planned change, and specifically the literature on planned change in education settings, suggests that organizational climate is a key factor in the adoption and implementation of an innovation. The purpose of this paper is to examine the concept of school climate.

The paper begins with a general review of the literature on organizational climate. Using three major reviews of the literature on climate that appeared in the mid-1970's as its basis, the paper defines climate, examines variables that have been used as part of climate constructs, examines the distinctions which have been drawn between climate and other organizational variables, and discusses key measurement problems related to climate.

The paper then examines research which has been done on organizational climate in schools. Discussion centers on Halpin and Croft's Organizational Climate Description Questionnaire and Likert's Profile of a School. Studies which have used these instruments to

examine change in schools are summarized.

The paper concludes with a discussion of the limitations of existing instruments to measure school climate and suggestions for future research.

> The concept of organizational climate is undoubtedly important, but it also seems to be one of the fuzziest concepts to come along in some time (Guion, 1973, p. 121).
>
> Research should continue. The concept of organizational climate is too important to abandon (Thomas, 1976, p. 457).

The Wisconsin Research and Development Center for Individualized Schooling's project Studies of Implementation is a 3-year longitudinal investigation of planned change in selected elementary schools. Specifically, the study seeks to identify factors or conditions that promote or retard change by tracking the adoption and implementation of Individually Guided Education (IGE) in ten elementary schools in Wisconsin; these schools were selected by stratified random sampling to reflect varying years as IGE schools, urban and non-urban settings, and use of the Center's reading and mathematics curricular products. A complete description of the project, rationale for using IGE as the innovation under consideration, details of the site selection process, and descriptions of the sites for the study are available in Technical Report No. 494, Foundations of the Studies of Implementation: The Innovation and Research Sites (Note 1).

The literature on planned change, and specifically the literature on planned change in educational settings, suggests that organizational climate is a key factor in the adoption and implementation of an innovation. Berman and McLaughlin conclude from studies on the implementation of federal policies conducted for the Rand Corporation (1976) that school climate is of primary importance: ". . .the local organizational climate and the motivations of project participants had

major effects on perceived success and on change in teacher behavior" (p. 361). Fullan and Pomfret (1977) adopt this position when reporting their research on the implementation of educational changes: "Several studies suggest that the existing 'organizational climate' of adopting units plays a critical role in whether and how implementation occurs" (p. 383). Implicit in the above statements are two key assumptions about organizational climate: (a) that it exists as a discrete organizational attribute, and (b) that it can somehow be measured or assessed.

The purpose of this paper is to examine the concept of school climate. Though this review will begin by examining organizational climate in general, its primary intent is to look at school climate in particular and what studies have shown about the relationship between school climate and planned educational change. The paper will establish what is meant by the climate construct, report how climate has been studied, describe what research has shown about climate and change, and conclude with recommendations for further consideration of school climate.

Organizational Climate: A General Review of the Literature

Three major reviews of the literature on organizational climate appeared in the mid-1970's (Hellriegel & Slocum, 1974; James & Jones, 1974; Payne & Pugh, 1976). The three articles use somewhat different schemes for subdividing the research on climate. Together the three articles cite in excess of 100 studies, but only 3 of these are cited

in all 3 reviews. The articles differ, then, in both approach and in the bases from which they draw conclusions about research on organizational climate.

All three articles suggest a number of definitions for organizational climate. In fact, in each article the reviewers include definitions to fit each of the several ways climate is conceptualized in the articles they review. One generally applicable definition is that offered by James and Jones when they quote a 1964 review of the climate literature by Forehand and Gilmer: Climate is "a set of characteristics that describe an organization and that (a) distinguish the organization from other organizations, (b) are relatively enduring over time, and (c) influence the behavior of people in the organizations" (p. 1097). James and Jones question how so broad a definition can be useful in distinguishing climate from other organizational attributes such as structure, system values and norms, processes, and physical environment. In fact, the general definition of organizational climate suggested by Payne and Pugh includes many of these variables:

> Payne (1971) has described climate as a 'molar concept reflecting the content and strength of the prevalent values, norms, attributes, behaviors, and feelings of the members of a social system which can be operationally measured through the perceptions of system members or observational and other objective means'(p. 1141).

This definition suggests yet another problem; it emphasizes that whatever organizational attributes are included in organizational climate must be measurable, an approach that uses definition by measurement rather than attempt to delimit the confines of the construct (see James & Jones, p. 1108).

Nunnally (1967) identifies three aspects to the process of measuring and validating a construct:

1. specifying the domain of observables,
2. determining to what extent all, or some, of those observables correlate with each other or are affected alike by experimental treatments, and
3. determining whether or not one, some, or all measures of such variables act as though they measure the construct (p. 87).

Nunnally notes that step one above, specifying the domain of observables, is rarely the initial step. Instead, attempts to develop particular measures suggest the domain of the construct. The end product that Nunnally describes as the goal for research on any construct is a useful description against which the research on the climate construct can be balanced:

> Hopefully the end product of this complex process is a construct (a) that is well defined in terms of a variety of observables, (b) for which there are one or several variables that well represent the domain of observables, and (c) that eventually proves to relate strongly with other constructs of interest (p. 88).

The beginning for work on organizational climate is the sense that there is something about a particular organization that distinguishes it from other organizations of similar purpose and design. This feel, this attitude, has been called "organizational climate," but attempts to operationalize the term raise several key issues. Some of the issues concern the domain of the construct; still others are related to appropriate forms of measurement.

As suggested by the definitions given above, a key problem in delimiting the construct is establishing which organizational and individual attributes properly belong to the climate construct. An early article on organizational climate by Argyris (1958) takes a broad approach. Argyris suggests that an organization consists of three interrelated systems of variables: (a) formal organizational variables such as policies, practices, and job descriptions; (b) personality variables such as needs, abilities, values, self-concept, and defenses; and (c) informal variables such as rate setting and the grapevine that arise out of the members' struggle to adapt to the formal organization. Climate is the organizational behavior formed from the interactions of the three systems and has properties different from those of the three systems of variables it involves.

Payne and Pugh, in a simple systems model in which they summarize the relationships considered in their survey of the literature, delimit climate much more narrowly. Under climate, which they describe as subjective because it is influenced by organization members' perceptions, they list the following variables: progressiveness and development, risk taking, warmth, support, and control. Later in their article they refer to another set of variables in organizational climate:

> Campbell, Dunnette, Lawler, and Weick (1970). . .usefully described four major dimensions of organizational climate: (a) individual autonomy; (b) degree of structure imposed on the position; (c) reward orientation; and (d) consideration, warmth, and support. Of these, individual autonomy was perhaps the clearest composite. . .(p. 1140).

Both lists concern relationships among organization members.

The other two reviews of climate literature describe climate in broader terms. Hellriegel and Slocum suggested the following dimensions needed in a climate instrument: relationships among people, organizational structure, organizational task, and level of technology. Later in the article they suggest other concerns. The approach taken by James and Jones is even broader. They list 42 variables that might describe organizational climate under the following headings: context, structure, process, physical environment, and systems values and norms (p. 1098). However, they point out that this approach to climate is overly broad and requires limitation.

Further evidence of the variety of considerations that have been assigned to the climate construct is provided by Johannesson's (1973) chart of the factor names given to measures of organization climate in six studies, two of which (Litwin & Stringer, 1968, and Meyer, 1968) used the same items. The chart is reproduced as Table 1. The chart shows that climate researchers are far from agreeing on the set of variables which constitute the domain of organizational climate.

Other possible aspects of the climate construct can be suggested which have not been included in the above descriptions. None of the above, for example, suggests that the environment in which the organization exists may be an important factor in assessing the climate of the organization. (The "context" referred to by James and Jones is

Table 1

Factors Names of Various Measures of Organizational Climate

Studies					
Litwin & Stringer (1968)	Thornton (1969)	Schneider & Bartlett (1968)	Payne & Pheysey (1971)	Meyer (1968)	Friedlander & Marguiles (1969)
Structure	High Pressure Supervision	Managerial Support	Organizational Progressiveness	Constraining Conformity	Disengagement
Responsibility	Stultifying vs. Challenging Environment	Concern for New Employees	Normative Control	Responsibility	Hindrance
Rewards	Distant vs. Close Working Relationships	Intra-agency Conflict		Standards	Intimacy
Warmth	Pleasant vs. Crowded Working Conditions	Agent Independence		Rewards	Espirit
Standards	Efficiency and Clarity of Purpose	General Satisfaction		Organizational Clarity	Aloofness
Conflict		Managerial Structure		Friendly Team Spirit	Production Emphasis
Identity					Thrust
Risk					Consideration

Source. Reproduced from "some problems in the measurement of organizational climate" by R. E. Johannesson, Organizational Behavior and Human Performance, 1973, 10, p. 120.

internal, not external.) Dieterly and Schneider (1974) claim that the way a company treats its customers may be a cause of climate perceptions and, thus, the perceived climate involves more than what happens to employees. One could argue, then, about whether treatment of customers causes a certain kind of climate or is a part of that climate. None of the above conceptualizations takes into account the possibility that climate may shift depending on the element of interest: the climate for leadership, for example, may be different from the climate for change (Schneider & Snyder, 1975). Taken together, the above attempts to delimit the climate construct show the naiveté of Hellreigel and Slocum's assessment. "On a conceptual level, the organizational climate construct has relatively well-defined boundaries and suggests considerable potential for describing and understanding behavior of individuals within organizations (p. 276). It is much easier to agree with James and Jones: "In most usages organizational climate would neither deserve a separate component in an organizational model nor qualify as a construct because even the rudiments of a nomological net are unidentified" (p. 1109).

Some of the research on organizational climate has involved attempts to separate organizational climate from other organization measures. Some researchers have tried to determine whether job satisfaction and organizational climate are different constructs or whether attempts to define organizational climate are not, in fact, redefinitions of job satisfaction. In a 1973 article Johannesson suggests that the two are redundant. He hypothesizes that "climate factors can

be readily accounted for by satisfaction factors which have had the benefit of a history of careful study and repeated investigations" (p. 122). Johannesson's research involved administering the SRA Employee Inventory, the Job Description Index (JDI), and 90 perceptual climate items to 499 employees in 2 plants of a large Ohio manufacturing company. He used cluster analysis to test whether the Employee Inventory, JDI, and organizational climate items were similar measures of the same thing rather than different measures of different things. Johannesson concluded that most of the variance in organizational climate, at least as measured by the perceptions of organization members, "could be subsumed in factors traditionally found in satisfaction research" (p. 140). Organizational climate failed to account for additional variance (p. 141).

However, Hellriegel and Slocum contend that such a conclusion is premature. They point out that a number of studies have shown a relationship between job satisfaction and climate, but that it is reasonable to expect interrelationship of the two. Climate instruments, they explain, seek to describe the work environment while satisfaction instruments evaluate it. LaFollette and Sims (1975) agree that this is the essential difference between measures of climate and measures of satisfaction. Their research shows significant relationships between organizational climate as measured by the Litwin and Stringer instrument and job satisfaction as measured by the Job Description Index. However, when they related both the climate instrument and the JDI to job performance, the results were not the same:

> In this research, job performance is highly related to 33% of the Climate Factors and to 21% of the Practices Factors, but job performance is significantly related to 100% of the Job Description Index scales. If all these measures are indeed redundant measures, it would not be expected that the significant relationships between the various constructs would vary so dramatically (p. 273).

Refuting Johannesson, they argue that a strong correlation does not prove redundancy or causality. Schneider and Snyder (1975) also distinguish between organizational climate and job satisfaction by conceptualizing the former as characteristics of organizations and the latter as an affective response. Their research provides evidence to support the distinction:

1. Responses to two measures of satisfaction were more related to each other than they were to the responses to a measure of climate.
2. Respondents, when grouped by position level within an organization, tended to agree more on the climate of their agencies than they did on how satisfied they were.
3. Climate and satisfaction perceptions were more highly correlated for people in some positions than for people in other positions.
4. Those persons who described the climate of their agencies in what would traditionally be thought of as the most 'positive' sense were not necessarily the most satisfied.

5. Neither climate nor satisfaction perceptions were strongly related to available production data.
6. Satisfaction perceptions tended to be more closely related to the turnover data available for the year following the administration of the questionnaire than were climate perceptions (p. 326).

The question of whether organizational climate and job satisfaction are redundant constructs appears to be still open.

In fact, debate about redundancy is not limited to the relationship between organizational climate and job satisfaction. Dieterly and Schneider (1974) examined possible redundancy between perceived power and perceived climate in a laboratory study. Their research shows moderate correlations between the two (r's $\simeq$ .30), which suggests "that people were making a distinction between self-perceptions and organizational perceptions" (p. 331). James and Jones note other possible overlaps:

> In sum, organizational climate appears to have been used primarily as a global concept or summary category which tends to be tautological in that it duplicates other situational characteristics generally considered as context, structure, process, and so forth (p. 1109).

Questions of redundancy suggest that the climate construct has not been clearly and generally defined.

A second key problem is establishing appropriate measures of organizational climate. Many of these concerns result from problems with delimiting the concept. Hellriegel and Slocum report studies

involving 16 different climate instruments. Most were intended for business audiences and sampled middle or low management. They vary int he number of items from a low of 9 to a high of 254, with most between 20 and 80. Virtually all use ordinal scales for responses, but they vary widely in response categories, increasing the difficulty of cross-study comparisons. The variety of dimensions included in the instruments already has been noted (see Table 1). Reliability of the instruments has generally been evaluated through inter-item, item-scale, and split-half methods. Validity evidence for the instruments varies greatly in degree and sophistication. Hellriegel and Slocum point out that "there has been no adequate balancing or representation of the dimensions to be included in a climate instrument" (p. 262).

Studies have used climate as an independent variable, as a dependent variable, and as an intervening variable. Hellriegel and Slocum organize part of their review of the literature along these lines. When climate has been studied as an independent variable, different sets of procedures and practices which represent different climates have been constructed. Performance or job satisfaction is often used as the dependent variable. Studies which used climate as a

dependent variable have assessed it by having people in the situation describe practices and procedures. Schneider (1975) suggests that these studies have not explicitly made a connection between these practices and procedures and the climate they produce. Internal organizational properties such as the locus of decision making and position in the hierarchy or structural variables have been used as the independent variables. Studies which have regarded climate as in intervening variable have used a priori definitions of climate according to Schneider (1975). These studies, which include those by Hall and Schneider, McGregor, and Likert, specify "the kinds of practices and procedures they hypothesize lead people to think of their organization's climate in a particular way" (Schneider, 1975, p. 463). In some of these studies human relations training programs, leadership styles, and managers' needs have been identified as independent variables and job performance and job satisfaction as dependent variables. Dieterly and Schneider (1974) used climate as an intervening variable in their study with level of formal position, degree of participation in decision making, and philosophy of the organization towards customers as independent variables. They identify the dependent variables as power perceptions and perceptions of the climate.

The problem of whether climate is best measured by objective measures or perceptual measures or some combination of the two is at the heart of much of the confusion about climate definitions, the domain of the construct, and conclusions that can be drawn from research. Both James and Jones and Payne and Pugh organized their literature

reviews around these differences in climate research, and Hellriegel and Slocum also consider the issue extensively. A limited number of researchers have tried to define climate in objective terms. Included in their considerations are such organizational aspects as number of levels of authority, ratio of administrative personnel to production personnel, and quantity of formal rules (Johannesson, 1973). Performance records might also be included. Hellriegel and Slocum note three problems with objective measures of climate: (a) the variables are too numerous and too specific to be readily interpreted; (b) it is difficult, perhaps impossible, to determine how the specific objective properties are related to each other or to the functioning of the organization; and (c) the assumption must be made that these objective properties affect organization members.

Many more researchers have used perceptual measures of climate. The problem with these measures involves their accuracy. Some researchers have declared that the climate is what organization members believe it to be (Halpin & Croft, 1963). Others see weaknesses in this position. All three reviews of the climate literature refer to these weaknesses, but the discussion in an article by Guion (1973) is particularly helpful. Guion notes that most research on organizational climate has dealt with individual perceptions of climate. He suggests that if it is only individual perceptions that the researcher is interested in, it is likely that the researcher has done nothing more than measure old constructs under new names. One of these old constructs is job satisfaction. However, if the researcher presumes to study the

attributes of organizations, then the accuracy of perceptions is an important issue (pp. 122-123).

James and Jones point to an additional problem. Unless the accuracy of perceptions is tested by the use of multiple sources of measurement, the question of consensus among perceivers is unresolved:

> The requirement for purely perceptual measurement does not permit a differentation between such diverse but importantly different situations as: (a) inconsistent or capricious leader behavior, (b) leader behavior adapted to individual needs, (c) differences in perception caused by perceivers having different opportunities to observe leader behavior, (d) differences in perception related only to individual characteristics, and (e) instrument error (p. 1104).

Whether balancing perceptions with other measures would solve these problems is yet another question. A study by Gavin (1975) which tried to determine the extent to which climate perceptions could be accounted for by measures of personal and organizational variables did not show the expected interactions.

All three reviews of the literature on organizational climate conclude with some recommendations for further research. Hellriegel and Slocum suggest that future researchers should combine perceptual and objective measures of climate and consider the relationship between the external environment and the subsystem. They also see a need for greater consistency among researchers who examine climate so that cross-comparisons are possible. James and Jones emphasize the need to establish the conceptual boundaries of organizational climate. Specifically, they recommend distinguishing between climate regarded as an organizational attribute, which can be properly called "organizational climate,"

and climate regarded as an individual attribute, which they suggest would be better named "psychological climate." Organizational climate must be conceptualized to include structural variables and must specify the interrelationships among variables, according to James and Jones. They also are convinced that perceptual measures of climate need to be tested against objective measures. They see possible conceptual bounds of organizational climate in situational influences that "may go beyond known situational characteristics" (p. 1109). Their examples explain what they mean:

> One example of this type of variable is the role of consensus of perceptions of the environment and the influence of consensus or lack of it upon behavior. Another example might be variables or dimensions which represent a separate state of events stemming from interactions between known situational characteristics but which go beyond a summary or composite measurement of these characteristics. Examples might include organizational pressure on groups or individuals or friendliness and warmth of the group environment. All of the examples above are amenable to multiple forms of measurement (p. 1109).

They conclude with an important caveat: ". . .the nature and role of such situational and potential climate variables remains to be discovered" (p. 1109).

Payne and Pugh conclude their review of the literature with an optimistic conclusion and a pessimistic conclusion. In their pessimistic assessment they note that different operationalizations of structure and climate measures have shown low correlations, which indicate the inadequacy of past measures. Their pessimistic conclusion: "Future research can ignore most of these studies and utilize a completely different approach" (p. 1168). Payne and Pugh recommend

field studies that allow the researcher to exchange data explanations with subjects and involve deep commitments from the members of complex systems so that the data collected will accurately reflect experience. "When thousands of such detailed cases exist, then we may again attempt comparative research" (p. 1168). In their optimistic conclusion they note that methods have been developed for measuring dimensions of organizational structure and climate which do differentiate between different organizational systems. They see the problems as challenges and the benefits as well worth the effort:

> We can benefit from the ability to design organization structures and to create climates which are appropriate to particular goals and needs. Furthermore, the planning and implementation of social changes will be more feasible with such knowledge. Thus, research which improves our understanding of organizational structure and climate will make an important contribution to our future (p. 1169).

Other writers on organizational climate have made suggestions similar to those which conclude the three literature reviews. Guion (1973) suggests a method by which individuals' perceptions of the climate might be aggregated to produce estimates of organizational attributes:

> An appropriate methodology may be described in its simplest terms through the use of dichotomies, in which a statement of an organizational attribute, or the perception of one, is treated as it if either were or were not true. A list of such statements can be presented to all the members of a given organizational unit and the frequency of endorsement determined. The items to be treated as genuinely descriptive are those in which the frequency of endorsement either is not significantly different from 100% or not significantly different from 0% (p. 124).

Johannesson (1973) also sees the value of field methodology in climate research:

> Another alternative to climate measurement may lie in utilization of a nonparticipant observer. Such an individual would be trained to observe and record critical behavior sequences among members of the organization. How discipline is handled, crisis situations met, work assigned, and rewards distributed; all seem potential indicants of organizational quality (pp. 142-143).

Nunnally (1967) describes a construct name as "a useful way to label a particular set of observable variables. Then the name is 'valid' only to the extent that it accurately communicates to other scientists the kind of observables that are being studied" (p. 95). Given the research which has been done to date, such accuracy cannot be associated with the climate construct. Steps which must be taken to make the construct more generally useful have been suggested. Organizational climate as it is generally conceptualized is a global measure. Specification of its conceptual boundaries have varied a great deal among researchers. Before cross-comparisons and validations are possible, researchers and theoreticians must reach more agreement on the domain of variables assigned to the construct.

Defining and Measuring School Climate

Definitions of school climate are generally related to definitions from general organizational theory. Sergiovanni and Starratt (1979), for example, base their definition on that in Litwin and Stringer's book Motivation and Organizational Climate: Climate is

> . . .a combination of enduring characteristics which describe a particular school and distinguish it from other schools, and the feeling which teacher and student have for that school. Accordingly, climate represents a composite of mediating variables which intervene between initiating and school effectiveness variables (p. 96).

Climate, in other words, is what makes the feel of a particular school unique. Hoy and Miskel (1978) also emphasize this uniqueness: "The set of internal characteristics that distinguish one school from another and influences the behavior of people in it is called the organizational climate" (p. 137). Hoy and Miskel appear to see climate as the aggregate of individuals' beliefs:

> The climate is the end product of the school groups--students, teachers, administrators--as they work to balance the organizational and individual dimensions of a social system. These products include shared values, social beliefs, and social standards (p. 137).

Descriptions of what organizational variables can properly be assigned to the school climate construct vary less than similar descriptions for organizational climate. This can be seen by comparison of the two climate instruments that have been used most extensively for research in schools, the Organizational Climate Description Questionniare (OCDQ) by Halpin and Croft and the Profile of a School (POS) by Likert, an adaptation of the Profile of Organizational Characteristics. Both use limited approaches to school climate.

Halpin and Croft (1963) are candid about the limitations of their definition:

> We recognized when we had first proposed this study that among the numerous factors which could be conceived as defining the Climate of a school, the following--at the very least--would need to be taken into account: the socioeconomic status of the school's patrons; the biographical and personality characteristics of the principal and the teachers; the 'quality' of the students; the attitudes of the parents toward the school; the school's physical plant; the teachers' salary schedule; the educational and administrative policies of the school district; the location [in the system, geographic location, and urban or rural setting] of the school; and, of prime importance for the present phase of the study, the social interactions that occur between the teachers and the principal. We knew that we could not handle all of these facets simultaneously. Yet we had to start somewhere. So we chose to limit the scope of the present study to descriptions made of the school primarily in terms of teacher-principal relationships (p. 7).

These limitations are important. They produce inherent problems, as noted in the above discussion of organizational climate. The climate construct as defined by Halpin and Croft deals with only one aspect of relationships within a school, though the relationship is seen as key in many analyses of school social systems. Not only is this limitation important, but later discussions and applications of the OCDQ have frequently lost sight of it and taken the OCDQ as a measure of the total climate of a school. Moreover, though many of the factors Halpin and Croft listed as important parts of school climate and others they suggested later such as the effect of the group on the leader, the school system as a context for the school, various other demographic features, and the "political flavor" of the community (Halpin, 1966, p. 201) could be assessed by objective measures, they chose to deal only with perceptual measures:

> We have assumed that how a leader <u>really</u> behaves is less important than how members of his group perceive that he behaves; it is their <u>perception</u> of his behavior that will determine the behavior of the group members, and will hence define the Organizational Climate (Halpin & Croft, 1963, pp. 9-10; emphasis in the original).

Halpin and Croft see climate as assessable by aggregated individual perceptions: "We are satisfied to take the position that the faculty's consensus in its perception of the school's climate can be used as a dependable index of what is 'out there' (Halpin, 1966, p. 147). When looking at the OCDQ and results obtained through its use in research, it is important to remember the problems with perceptual measures as discussed above.

Descriptions of the OCDQ, the four factors which describe the behavior of the teachers and the four which describe the behavior of the principal, and the six profiles of organizations that additional factor analysis produced are available in many sources (see, for example, Halpin, 1966; Hoy & Miskel, 1978; Lipham & Hoeh, 1974; Sergiovanni & Starratt, 1979). The four factors that describe teacher behavior have been identified as follows:

1. Disengagement--teachers do not work well together;
2. Hindrance--the principal burdens teachers with unnecessary work;
3. Esprit--morale; social needs are satisfied and teachers have a sense of accomplishment about their work;
4. Intimacy--the teachers have friendly social relations.

Halpin (1966) notes that Esprit was chosen as the key subtest for describing the school's climate. He adds, "We infer that high Esprit reflects an 'effective' balance between task-accomplishment and social-needs satisfaction" (p. 170). The four factors which describe principal behavior are the following:

5. Aloofness--the principal is formal and impersonal;
6. Production emphasis--the principal is directive, task-oriented, and closely supervises the staff;
7. Thrust--the principal motivates by his own example of hard work;
8. Consideration--the principal treats teachers humanely.

The crucial subfactor in this list is Thrust (Carver and Sergiovanni, 1969).

Later research on the OCDQ has questioned the validity of the instrument. Kenney and Rentz (1970), for example, tested the OCDQ in urban elementary schools and produced four significant factors rather than eight. Carver and Sergiovanni (1969) tested the OCDQ in secondary schools and concluded that

> opportunities for total staff teacher-teacher and teacher-principal interaction are so dramatically reduced, relatively, in large secondary schools that teachers are simply unable to check the 'most favorable' response to the items comprising these two subtests. Thus, low Esprit and Thrust scores are inevitable. . .(p. 80).

This result might be avoided if the focus were shifted to a subunit within the school (see also Finlayson, 1973).

The six organizational profiles which emerged from the OCDQ exist on the following continuum from the authentic, lively, open

climate, in which leadership acts emerge from both the group and its leader, to the closed climate, which is characterized by apathy, low esprit, and inauthentic behavior: the open climate, the autonomous climate, the controlled climate, the familiar climate, the paternal climate, and the closed climate. These climate profiles have been seriously questioned in subsequent research. Thomas (1976) reports virtually no support for these profiles as first outlined by Halpin and Croft (p. 450). Given that, the implications in the following statement by Halpin (1966) are not to be taken lightly: "In a sense we did not disover these Organizational Climates, we invented them" (p. 138, emphasis in the original).

In summary, the OCDQ has been used extensively in research on school climate. Several problems with the OCDQ have been suggested. Those referred to above include the difficulty of validating perceptions, the limited measure of school climate that the instrument uses, and the inappropriateness of the instrument for use in secondary schools or even large elementary schools. These limitations must be remembered when assessing the results of research done with the OCDQ.

Likert's conception of organizational climate differs somewhat from that of Halpin and Croft, though Hall (1972), in a comparison of the OCDQ and the Profile of a School, found that the organizational models from which the two were developed are comparable. Likert sees climate as an intervening variable between what administrators do and organizational effectiveness (Sergiovanni & Starratt, 1979). Causal variables are those which are subject to deliberate change by the

organization and its management. These include structure, policies, strategies, and behavior (Likert, 1967). Intervening variables, on the other hand, cannot be altered directly by the management. These variables, Likert says, "reflect the internal state and health of the organization, e.g., the loyalties, attitudes, motivations, performance goals, and perceptions of all members and their collective capacity for effective interaction, communication, and decision making" (Likert, 1967, p. 29). End result variables are the dependent variables in Likert's conceptualization. Among them he lists performance and financial variables such as level of productivity, quality of product and service, level of costs, and current values of investments (Likert, 1967, pp. 228-229).

Likert reports that his Profile of Organizational Characteristics was initially devised to show the comparative differences among management systems. Its use as a measure of the nature of the management system was recognized later (Likert, 1967). Likert's conception involves four different climates: System 1, exploitive-authoritarian; System 2, benevolent-authoritarian; System 3, consultive; and System 4, participative. Though the systems might be presumed to exist on a continuum similar to that for the six organizational profiles of Halpin and Croft, Likert sees the four systems as more or less mutually exclusive:

> The communication processes of System 1 are compatible with all other aspects of System 1 but are not compatible with any aspect of System 3 or System 4. The same is true of the decision-making processes and the compensation plans. The management system of an organization must have compatible component parts if it is to function effectively (Likert, 1967, p. 123).

System 4 is the ideal. As organizations move toward System 4 they ". . .are more productive, are characterized by high-performance work groups, have lower costs, have more favorable attitudes, and display improved labor-management relations. . .(Sergiovanni & Starratt, 1979, p. 79).

Likert's approach focuses on the relationship between superior and subordinate as does Halpin and Croft's. Likert calls this relationship "crucial" and defines the basic principles of System 4 management in terms of the behavior of the supervisor:

1. the use by the manager or the principal of supportive relationships,
2. his use of group decision making, and
3. his high performance goals for the organization (Likert, 1967, p. 47).

As do Halpin and Croft, Likert measures climate by perceptions, specifically the perceptions of subordinates:

> . . .it is essential to keep in mind that the interactions between the leader and the subordinates must be viewed in the light of the subordinate's background, values, and expectations. The subordinate's perception of the situation, rather than the supervisor's, determines whether or not the experience is supportive (Likert, 1967, pp. 47-48).

Likert's Profile of a School is an adaptation of the Profile of Organizational Characteristics. It consists of 93 items with responses identified on an 8-point Likert scale. Likert's factor analysis of the items produces 38 indexes such as the following: support by the principal, teachers' openness regarding the principal, teacher frustration, student motivation, work facilitation by department head, and work facilitation by the principal.

Because of the similarities between the OCDQ and the POS, Likert's instrument is subject to some of the same reservations as those mentioned in regard to the OCDQ: The conceptual boundaries of organizational and school climate as operationally established by the instrument are quite limited and the instrument uses unvalidated perceptual measures of climate. As some of the indexes listed above suggest, Likert's instrument is designed so that it can be used in larger schools with more hierarchical structure.

At least two additional criticisms have been leveled at the Likert's measures of climate. Both were directed at the Profile of Organizational Characteristics but are equally appropriate for the Profile of a School. First, Payne and Pugh (1976) note that Likert fails to use his own distinctions between causal, intervening, and end-result variables. Likert fails to draw connections between the extensive list of variables he presents in The Human Organization and the items in his instrument, and these connections are not obvious. However, Ladouceur (Note 2) suggests that the problem of classification stems from the fact that the variables are part of a network with complex interdependencies. The network explains why it is difficult to classify variables and accounts for differences among organizations in the function of a particular variable. A second problem is that many of the items in Likert's instrument reflect value judgments:

> . . .the ideal response may be transparent. Golembiewski and Munzenrider ["Social Desirability and an Intervening Variable in Interpreting OD Effects," paper presented at the 33rd Annual Conference, Academy of Management, Boston, Massachusetts, August 1973] conclude that social desirability responses pose a real problem for Likert's climate instrument. Their data indicate that respondents who attribute System 4 properties (participative) to their organization

> scored higher on an independent measure of social desirability than members who described their organization's climate in terms of other systems (Hellriegel & Slocum, 1974, p. 262; see also Payne & Pugh, 1976).

Likert's instrument may too clearly indicate what the response "should" be.

Though this paper is concerned with only two of the most commonly used measures of school climate, it should be noted in passing that other measures exist. Hoy and Miskel describe two: the Pupil Control Ideology, which describes schools on a continuum from custodial to humanistic, and the Pupil Attitude Questionnaire, which measures alienation. A 1976 study by Epstein and McPartland used a questionnaire they called the Quality of School Life to measure student reactions in three areas: "(a) satisfaction with school in general, (b) commitment to school work, and (c) attitudes toward teachers" (p. 15). Kelley, Wood, and Joekel (1973) used the Organizational Climate Index developed by George G. Stern to test the relationship between school climate and the implementation of IGE.

The central question for the purposes of this paper is what studies using the OCDQ and the Profile of a School have shown about school climate and planned change. Theory suggests that open climates and System 4 organizations should be more innovative and receptive to change. Research has partly shown this to be true, though the results are not clear and convincing. Thomas (1976) reports on several studies which used the OCDQ to study innovativeness:

> Recker (1968) noted the relationship between the openness of organizational climate in secondary schools with teachers' 'readiness to change'; . . .Hughes (1968), in an extension of his earlier study (1965), noted that the openness of climate of central offices was related to school district innovativeness. Peach (1967), however, observed a significant relationship between autonomous climate and innovativeness. Bennett (1968) noted such a relationship between the autonomous climate and both the total number of innovations and the curricular innovations adopted. The controlled climate was related negatively to those two measures of innovativeness (pp. 454-455).

Marcum (1968) compared the climates of ten schools in a five-state area that had been selected as most innovative with ten that had been identified as least innovative through an innovation checklist. He found significant differences between the mean climate scores. In addition, he found that those schools which were using innovative practices generally had open climates and those not as innovative had closed climates. Marcum found a significant difference between teachers' perceptions of climate and administrators' perceptions in innovative schools, but he did not find a corresponding difference in the noninnovative schools. Helsel, Aurbach, and Willower (1969) used the OCDQ to test their hypothesis that teachers who perceived the climate as relatively open would estimate desirable change as possible. This major hypothesis was not supported, though the authors did discover significant relationships between aspects of principal behavior and expectations of successful change. Reynoldson (Note 3) used the OCDQ as part of his study of the relationships between the decision-making processes and innovativeness

of public schools. He surveyed 52 schools in 4 states which had been identified as innovative. Reynoldson found a statistically significant relationship between organizational climate scores and innovativeness and statistically significant differences in innovativeness between schools with open climates and schools with closed climates. He concluded, "The openness of organizational climate appears to be an important variable to consider in attempting to establish an environment conducive to the adoption of educational innovations" (p. 39). Finally, Paul (1977) reported a firm generalization that can be made from studies of change: "An open organizational climate may facilitate the introduction and use of an innovation, but it does not assure introduction and use" (p. 44). Paul contends that outcomes from the OCDQ do not sufficiently explain the variance among organizations in the extent of change.

Studies using the Profile of a School are not as readily available. A publication by Rensis Likert Association, Inc. (Note 4) reports the findings from 40 studies which used the Profile of a School. Several concern management and change.

Gehrman (1970) compared five innovative and five noninnovative high schools. He found a statistically significant difference in the climates of the two groups as perceived by students, but he also concludes that the significance is not practically significant and "is most probably due to an N of 609 rather than a practical significance in perception by students of the organizational climate of their high schools" (p. 84). No statistically significant difference was found in

the teachers' perceptions of climate. The mean scores on the six subparts of the Likert questionnaire for the two groups of schools indicate both groups can be described as having System 3 climates by both students and teachers.

Wiener (1972) compared six innovation and six noninnovative schools from three districts in New York state in order to test the relationship between the degree of openness of an organization and successful adoption of innovations. No significant difference was found between the climates of the innovation and noninnovative schools as measured by the Likert Profile of a School--Form T. Again, the profiles for all 12 schools in the study showed the schools to be predominantly System 3 organizations: "Although profiles differ between individual schools, the factor and overall profile means indicate a basic similarity among the schools studied" (p. 110). Wiener suggests that the procedure used to identify the schools in his study may have reduced the variance between the innovative and noninnovative schools, but Wiener's results are consistent with other studies which identify schools as predominantly System 3 organizations.

Ladouceur (Note 2) sampled eight secondary schools and 42 elementary schools. All his major hypotheses were supported. The results show a significant relationship between the management profile of a school and the climate for change, teachers' innovative activity and orientation, and quantitative and qualitative change capacities. Stepwise regression showed that "management profile accounted for 28% of the variance in qualitative change capacity and for 35% of the variance in change climate" (p. 162). The best predictors of school

change capacity were management profile (4.6%), teachers' innovative orientation (4.0%), years at the same school (2.8%), change climate (2.6%), sex (1.6%), and grade level of teaching (1.2%) for a total of 16.8% of the variance (p. 171). However, Ladouceur cautions that his results are based upon data obtained by survey research from one school district and that replication is needed before the results can be generalized.

Finally, Gauthier's study (1975) of 34 elementary IGE schools and 25 non-IGE schools in Connecticut found no difference between the groups in the ways teachers saw the principal's leadership and reacted to it. One focus of Gauthier's study was to determine whether the Multiunit School (MUS) component of IGE produces a more participative climate than the more traditional structure of non-IGE schools. Gauthier's results do not support such a relationship:

> Surprisingly, the MUS organizational component had a slight negative relationship with facilitative school climate (r = -.0261). Schools which had been using the MUS structure for at least one year did not display a more participative climate than schools not employing the MUS component (p. 106).

Though the three schools in Gauthier's study with the highest scores were IGE schools and the three with the lowest scores were non-IGE schools, all the schools in the study fell within the System 3, Consultive, profile on all the subscales and on total mean scores.

The report of a study conducted in elementary schools in San Bernardino County by Vice (1976) is unclear about what instruments were used in assessing school climate and innovativeness. It is included as part of this survey because Vice suggests that the relationship between innovativeness and management style and climate may

be nonlinear. In other words, management styles can be too teacher-centered and climates can become too open fro innovation. Vice draws a comparison with other management research:

> In writing about the concept of optimum stress, March and Simon point out, '. . .innovation will be most rapid and vigorous when the 'stress' on the organization is neither too high or too low.' The relationship in schools between innovativeness and management style seems to reflect this concept (p. 24).

Taken together, the above studies do not present a clear picture of the relationships between school climate and change. The problem may lie in the conceptualizations of climate. In fact, a much different approach to school climate such as that developed in a theoretical paper by Firestone (Note 5) might be more useful for assessing schools' change capacities. Firestone postulates that there are five organizational types of schools, which he calls "images," and that understanding these images will help innovators and change agents act more effectively. The problem may lie in the instruments used to measure climate, a problem discussed in preceding sections of this paper. The problem may lie in conceptions of innovation and change, a topic which has been discussed extensively in the literature and in the reports of Studies of Implementation. It may lie, as Fullan and Pomfret (1977) suggest, in the fact that no studies have measured organizational characteristics prior to the introduction of an innovation: "It may be that successful experiences with an innovation improve the social climate as much as the reverse" (p. 384). Sadly, problems probably lie in all these areas. It appears that theories and operationalizations of theories which will allow educators "to design organizational structures and to create climates

which are appropriate to particular goals and needs" and will produce a time when "the planning and implementation of social changes will be more feasible" (Payne & Pugh, 1976, p. 1169) will be even more complex than those which currently exist about organizational and school climate and change.

Where the Answers May Lie

Theory suggests, in fact, that we will only be able to match organizational climates and planned changes for optimal results when we can account for the interactions between the type of organization and the type of innovation. Downs and Mohr (1976) suggest that 100 organizations each adopting 10 innovations is really a sample of 1000, not 100 or 10. Berman and McLaughlin (1976) also discuss "the interplay between the characteristics of the project and its local setting" (p. 355). What is needed, then, in addition to reliable methods for identifying organization climates is, first, reliable ways for categorizing innovations and, then, reliable ways of relating organizations and innovations.

Though Downs and Mohr are concerned with the introduction of an innovation and Berman and McLaughlin with implementation, both suggest possible schemata for analyzing an innovation. Downs and Mohr (1976) classify the attributes of innovation into two categories: Primary attributes which allow an innovation to be classified without reference to a specific organization and secondary attributes with which classification depends on the organization. In a later article (1979) they list several dimensions of the innovation which are summarized in Table 2. Secondary attributes describe the relationship between

Table 2

Dimensions of the Innovation

1. Benefits
    a. Programmatic benefits
    b. Prestige benefits
    c. Structural benefits
2. Costs
    a. Decision costs
    b. Implementation costs
3. Resources
    a. Wealth
    b. Manpower, both expertise and time
    c. Equipment
    d. Information
    e. Staff tolerance for change
4. Discounting factors
    a. Risk
    b. Average cost of discontinuance
    c. Uncertainty[a]
    d. Instability of future benefits
    e. Venturesomeness[b]

[a]"lack of confidance that the organization has in its benefit-cost calculations"

[b]"the tendency for organization decision makers to ignore risk and uncertainty"

Source. Summarized from "Toward a theory of innovation" by G. W. Downs and L. B. Mohr, Administration and Society, 1979, 10, pp. 394-400.

the innovation and the organization, not just the organization or just the innovation. That makes dimensions such as "staff tolerance for change" acceptable attributes of the innovation.

Downs and Mohr (1979) then hypothesize a relationship between innovation and the variables in Table 2, $I = B/C \cdot R \cdot D$. Innovation equals the benefits divided by the costs multiplied by the resources and the discounting factors. Benefits, costs, and discounting factors can be multiplied by terms to indicate the relative impacts of various types of beneifts, costs, and discounting factors (see p. 402).

Berman and McLaughlin's (1976) approach to the innovation is less theoretical. They identify four project characteristics which can affect innovative projects. These are summarized in Table 3. Berman and McLaughlin's research shows that educational treatment or technology and resource level had little effect on project outcomes. However, the scope of the proposed change was found to have major effects.

The next step is to operationalize a set of characteristics so that innovations can be assessed for congruence with organizations in which they may be introduced. However, it is doubtful that organizational theory and its operationalization will easily reach the sophistication required to match organizational climates and planned change either in schools or in other organizations. Educational researchers who wish to use the existing climate instruments to study schools should be aware that these instruments are better regarded as measuring perceptions of principal-teacher relations or leadership behavior than as measuring a more global construct called "school climate." While they may be useful for comparing schools or

Table 3

Project Characteristics

1. Educational treatment or technology
   a. Classroom organizational changes
   b. Enrichment techniques
   c. Intensive traditional staffing
   d. School administrative changes
   e. Behavior modification techniques
2. Resource levels
   a. Funding level
   b. Number of students served
   c. Concentration of funding
3. Scope of proposed change
   a. Centrality of project goals to district goals
   b. Nature and amount of change required
   c. Complexity of the project
      (1) Structural complexity
      (2) Complexity of treatment
      (3) Integration into ongoing procedures
   d. Consonance or fit between the project goals, values, and practices and those of the school and district
4. Implementation strategies

Source. Summarized from "Implementation of educational innovation" by P. Berman and M. W. McLaughlin, Educational Forum, 1976, 60, 357-360.

tracking changes in a single school, they have not been shown to be valid measures of organizational types. Researchers who are interested in the congruence of organizations and planned change should deal with carefully defined aspects of each which can be operationalized and should report their results within those limited parameters.

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